

Year	Number of cases	Number of deaths	Number of survivors
1970	10	0	10
1971	15	0	15
1972	20	0	20
1973	25	0	25
1974	30	0	30
1975	35	0	35
1976	40	0	40
1977	45	0	45
1978	50	0	50
1979	55	0	55
1980	60	0	60
1981	65	0	65
1982	70	0	70
1983	75	0	75
1984	80	0	80
1985	85	0	85
1986	90	0	90
1987	95	0	95
1988	100	0	100
1989	105	0	105
1990	110	0	110
1991	115	0	115
1992	120	0	120
1993	125	0	125
1994	130	0	130
1995	135	0	135
1996	140	0	140
1997	145	0	145
1998	150	0	150
1999	155	0	155
2000	160	0	160
2001	165	0	165
2002	170	0	170
2003	175	0	175
2004	180	0	180
2005	185	0	185
2006	190	0	190
2007	195	0	195
2008	200	0	200
2009	205	0	205
2010	210	0	210
2011	215	0	215
2012	220	0	220
2013	225	0	225
2014	230	0	230
2015	235	0	235
2016	240	0	240
2017	245	0	245
2018	250	0	250
2019	255	0	255
2020	260	0	260
2021	265	0	265
2022	270	0	270
2023	275	0	275
2024	280	0	280
2025	285	0	285
2026	290	0	290
2027	295	0	295
2028	300	0	300
2029	305	0	305
2030	310	0	310
2031	315	0	315
2032	320	0	320
2033	325	0	325
2034	330	0	330
2035	335	0	335
2036	340	0	340
2037	345	0	345
2038	350	0	350
2039	355	0	355
2040	360	0	360
2041	365	0	365
2042	370	0	370
2043	375	0	375
2044	380	0	380
2045	385	0	385
2046	390	0	390
2047	395	0	395
2048	400	0	400
2049	405	0	405
2050	410	0	410
2051	415	0	415
2052	420	0	420
2053	425	0	425
2054	430	0	430
2055	435	0	435
2056	440	0	440
2057	445	0	445
2058	450	0	450
2059	455	0	455
2060	460	0	460
2061	465	0	465
2062	470	0	470
2063	475	0	475
2064	480	0	480
2065	485	0	485
2066	490	0	490

Desnoyers, Luc  
Ferrara, Napoleone  
Fong, Sherman  
Gao, Wei-Qiang  
Goddard, Audrey  
Gurney, Austin L.  
Pan, James  
Roy, Margaret Ann  
Stewart, Timothy A.  
Tumas, Daniel  
Watanabe, Colin K.  
Wood, William I.

<130> P2930R1C5

<151> 1998-08-04

<151> 1998-12-16

<151> 1998-12-16

<151> 1998-12-22

<151> 1999-01-12

<151> 1999-01-12

<151> 1999-01-12

<151> 1999-02-09

<151> 2000-03-03

<150> PCT/US99/12252

<151> 1999-06-02

<150> PCT/US99/28634

<151> 1999-12-01

<150> PCT/US99/28551

<151> 1999-12-02

<150> PCT/US00/03565

<151> 2000-02-11

<150> PCT/US00/04414

<151> 2000-02-22

<150> PCT/US00/05841

<151> 2000 -03-02

<150> PCT/US00/08439

<151> 2000-03-30

<150> PCT/US00/14941

<151> 2000-05-30

<150> PCT/US00/15264

<151> 2000-06-02

<150> PCT/US00/32678

<151> 2000-12-01

<140> US 09/866,034

<141> 2001-05-25

<160> 38

<210> 1

<211> 1283

<212> DNA

<213> Homo sapiens

<400> 1

cggacgcgtg ggacccatac ttgctggtct gatccatgca caaggcgggg 50  
ctgctaggcc tctgtgcccg ggcttggaat tcggtgcgga tggccagctc 100  
cgggatgacc cgccgggacc cgctcgcaaa taagggtggc ctggtaacgg 150  
cctccaccga cgggatcggc ttgccatcg cccggcggtt ggcccaggac 200  
ggggcccatg tggctcgtcag cagccggaag cagcagaatg tggaccaggc 250  
ggtggccacg ctgcaggggg aggggctgag cgtgacgggc accgtgtgcc 300  
atgtggggaa ggcggaggac cgggagcggc tgggtggccac ggctgtgaag 350

cttcatggag gtatcgatat cctagtctcc aatgctgctg tcaacccttt 400  
 ctttgggaagc ataatggatg tcaactgagga ggtgtggggac aagactctgg 450  
 acattaatgt gaaggcccca gccctgatga caaaggcagt ggtgccagaa 500  
 atggagaaac gaggaggcgg ctcaagtggg atcgtgtctt ccatagcagc 550  
 cttcagtgcca tctctcggct tcagtcctta caatgtcagt aaaacagcct 600  
 tgctggggcct gaccaagacc ctggccatag agctggcccc aaggaacatt 650  
 aggggtgaact gcctagcacc tggacttatc aagactagct tcagcaggat 700  
 gctctggatg gacaaggaaa aagaggaaa catgaaagaa accctgcgga 750  
 taagaagggtt aggcgagcca gaggattgtg ctggcatcgt gtctttcctg 800  
 tgctctgaag atgccagcta catcactggg gaaacagtgg tgggtgggtgg 850  
 aggaaccccg tcccgccctc gaggaccggg agacagccca caggccagag 900  
 ttgggctcta gctcctgggt ctgttctcgc attcaccacac tggcctttcc 950  
 cacctctgct cacttactg ttcacctcat caaatcagtt ctgccctgtg 1000  
 aaaagatcca gccttcctc cgtcaaggt ggcgtcttac tggggattcc 1050  
 tgctgttgtt gtggccttgg gtaaaggcct cccctgagaa cacaggacag 1100  
 gcctgctgac aaggctgagt ctacctggc aaagaccaag atattttttc 1150  
 ctggggcact ggtgaatctg aggggtgatg ggagagaagg aacctggagt 1200  
 ggaaggagca gagttgcaaa ttaacagctt gcaaagagg tgcaaataaa 1250  
 atgcagatga ttgcgcggct ttgaaaaaaa aaa 1283

<210> 2

<211> 278

<212> PRT

<213> Homo sapiens

<400> 2

Met	His	Lys	Ala	Gly	Leu	Leu	Gly	Leu	Cys	Ala	Arg	Ala	Trp	Asn
1				5					10					15
Ser	Val	Arg	Met	Ala	Ser	Ser	Gly	Met	Thr	Arg	Arg	Asp	Pro	Leu
				20					25					30
Ala	Asn	Lys	Val	Ala	Leu	Val	Thr	Ala	Ser	Thr	Asp	Gly	Ile	Gly
				35					40					45
Phe	Ala	Ile	Ala	Arg	Arg	Leu	Ala	Gln	Asp	Gly	Ala	His	Val	Val
				50					55					60
Val	Ser	Ser	Arg	Lys	Gln	Gln	Asn	Val	Asp	Gln	Ala	Val	Ala	Thr
				65					70					75

Leu	Gln	Gly	Glu	Gly	Leu	Ser	Val	Thr	Gly	Thr	Val	Cys	His	Val	
				80					85					90	
Gly	Lys	Ala	Glu	Asp	Arg	Glu	Arg	Leu	Val	Ala	Thr	Ala	Val	Lys	
			95						100					105	
Leu	His	Gly	Gly	Ile	Asp	Ile	Leu	Val	Ser	Asn	Ala	Ala	Val	Asn	
			110						115					120	
Pro	Phe	Phe	Gly	Ser	Ile	Met	Asp	Val	Thr	Glu	Glu	Val	Trp	Asp	
			125						130					135	
Lys	Thr	Leu	Asp	Ile	Asn	Val	Lys	Ala	Pro	Ala	Leu	Met	Thr	Lys	
			140						145					150	
Ala	Val	Val	Pro	Glu	Met	Glu	Lys	Arg	Gly	Gly	Gly	Ser	Val	Val	
			155						160					165	
Ile	Val	Ser	Ser	Ile	Ala	Ala	Phe	Ser	Pro	Ser	Pro	Gly	Phe	Ser	
			170						175					180	
Pro	Tyr	Asn	Val	Ser	Lys	Thr	Ala	Leu	Leu	Gly	Leu	Thr	Lys	Thr	
			185						190					195	
Leu	Ala	Ile	Glu	Leu	Ala	Pro	Arg	Asn	Ile	Arg	Val	Asn	Cys	Leu	
			200						205					210	
Ala	Pro	Gly	Leu	Ile	Lys	Thr	Ser	Phe	Ser	Arg	Met	Leu	Trp	Met	
			215						220					225	
Asp	Lys	Glu	Lys	Glu	Glu	Ser	Met	Lys	Glu	Thr	Leu	Arg	Ile	Arg	
			230						235					240	
Arg	Leu	Gly	Glu	Pro	Glu	Asp	Cys	Ala	Gly	Ile	Val	Ser	Phe	Leu	
			245						250					255	
Cys	Ser	Glu	Asp	Ala	Ser	Tyr	Ile	Thr	Gly	Glu	Thr	Val	Val	Val	
			260						265					270	
Gly	Gly	Gly	Thr	Pro	Ser	Arg	Leu								
			275												

<210> 3

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 3

gcataatgga tgctactgag g 21

<210> 4

<211> 23

<212> DNA

<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 4  
agaacaatcc tgctgaaagc tag 23

<210> 5  
<211> 46  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Synthetic Oligonucleotide Probe

<400> 5  
gaaacgagga ggcggctcag tggatgatcgt gtcttccata gcagcc 46

<210> 6  
<211> 3121  
<212> DNA  
<213> Homo sapiens

<400> 6  
gcgccttgag ctccgcctcc gggcccgata gcggcatcga ggcgcctcc 50  
gtcagaggacc aggcggcgca gggggccggc gggcgaaagg aggatgaggg 100  
ggcgcagcag ctgctgacct tgcagaacca ggtggcgcgg ctggaggagg 150  
agaaccgaga ctttctggct gcgctggagg acgccatgga gcagtacaaa 200  
ctgcagagcg accggctgcg tgagcagcag gaggagatgg tggaactgcg 250  
gctgcggtta gagctggtgc ggccaggctg ggggggcctg cggtctctga 300  
atggcctgcc tccgggtcc tttgtgctc gacctcatc agccccctg 350  
gggggtgccc acgcccattg gctgggcatt gtgccgcctg cctgcctccc 400  
tgagatgaa gttggctctg agcagagggg agagcagggtg acaaattggc 450  
gggaggctgg agctgagttg ctgactgagg tgaacaggct gggaagtggc 500  
tcttcagctg cttcagagga ggaagaggag gaggaggagc cggccaggcg 550  
gaccttacac ctgcgcagaa ataggatcag caactgcagt cagagggcgg 600  
gggcacgccc agggagtctg ccagagagga agggcccaga gctttgcctt 650  
gaggagttag atgcagccat tccagggtcc agagcagttg gtgggagcaa 700  
ggcccagatt caggcccgcc aggtcccccc tgccacagcc tcagagtggc 750  
ggctggccca ggcccagcag aagatccggg agctggctat caacatccgc 800  
atgaaggagg agcttattgg cgagctggtc cgcacaggaa aggcagctca 850  
ggccctgaac cgccagcaca gccagcgtat ccgggagctg ggcagaggag 900

cagagcaggt gcgggccgag ctgagtgaag gccagaggca gctgcgggag 950  
ctcgagggca -aggagctcca ggatgctggc gagcgggtctc ggctccagga 1000  
gttccgcagg agggctcgtg cggcccagag ccagggtgcag gtgctgaagg 1050  
agaagaagca ggctacggag cggctgggtgt cactgtcggc ccagagtgaag 1100  
aagcgactgc aggagctcga gcggaacgtg cagctcatgc ggcagcagca 1150  
gggacagctg cagaggcggc ttcgcgagga gacggagcag aagcggcgcc 1200  
tggaggcaga aatgagcaag cggcagcacc gctcaagga gctggagctg 1250  
aagcatgagc aacagcagaa gatcctgaag attaagacgg aagagatcgc 1300  
ggccttccag aggaagaggc gcagtggcag caacggctct gtggtcagcc 1350  
tggaacagca gcagaagatt gaggagcaga agaagtggct ggaccaggag 1400  
atggagaagg tgctacagca gcggcgggcg ctggaggagc tgggggagga 1450  
gctccacaag cgggaggcca tcctggccaa gaaggaggcc ctgatgcagg 1500  
agaagacggg gctggagagc aagcgctga gatccagcca ggccctcaac 1550  
gaggacatcg tgcgagtgtc cagccggctg gagcacctgg agaaggagct 1600  
gtccgagaag agcgggcagc tgcggcaggg cagcgcccag agccagcagc 1650  
agatccgcgg ggagatcgac agcctgcgcc aggagaagga ctcgctgctc 1700  
aagcagcgcc tggagatcga cggcaagctg aggcagggga gtctgctgtc 1750  
ccccgaggag gagcggacgc tgttccagtt ggatgaggcc atcgaggccc 1800  
tggatgctgc cattgagtat aagaatgagg ccatcacatg ccgccagcgg 1850  
gtgcttcggg cctcagcctc gttgctgtcc cagtgcgaga tgaacctcat 1900  
ggccaagctc agctacctct catcctcaga gaccagagcc ctctctgca 1950  
agtattttga caaggtggtg acgctccgag aggagcagca ccagcagcag 2000  
attgccttct cggaactgga gatgcagctg gaggagcagc agaggctggt 2050  
gtactggctg gaggtggccc tggagcggca gcgcctggag atggaccgcc 2100  
agctgacctc gcagcagaag gagcacgagc agaacatgca gctgctcctg 2150  
cagcagagtc gagaccacct cgggtgaaggg ttagcagaca gcaggaggca 2200  
gtatgaggcc cggattcaag ctctggagaa ggaactgggc cgttacatgt 2250  
ggataaacca ggaactgaaa cagaagctcg gcggtgtgaa cgctgtaggc 2300  
cacagcaggg gtggggagaa gaggagcctg tgctcggagg gcagacaggc 2350

tctctggaat gaagatgagc tccacctggc acccgagctt ctctggctgt 2400  
 cccccctcac tgagggggcc ccccgacccc gggaggagac gcgggacttg 2450  
 gtccacgctc cgttaccctt gacctggaaa cgctcgagcc tgtgtggtga 2500  
 ggagcagggg tcccccgagg aactgaggca gcgggaggcg gctgagcccc 2550  
 tggtagggcg ggtgcttctt gtgggtgagg caggcctgcc ctggaacttt 2600  
 gggcctttgt ccaagccccg gcgggaactg cgacgagcca gcccggggat 2650  
 gattgatgtc cggaaaaacc cctgtgaagc cctcggggca gacctgcct 2700  
 tggagggaga ctccgagcct gctgaaaggg gcagctgcct gttttgcttc 2750  
 tgtgaagggc agtccttacc gcacacccta aatccaggcc ctcatctgta 2800  
 cctcactgg gatcaacaaa tttgggccat ggcccaaaag aactggaccc 2850  
 tcatttaaca aaataatatg caaattecca ccacttactt ccatgaagct 2900  
 gtggtacca attgcgcctt tgtgtcttgc tcgaatctca ggacaattct 2950  
 ggtttcaggc gtaaatggat gtgctttagg ttcaggggtt tggccaagaa 3000  
 tcatcacgaa agggctcgtg gcaaccaggt tgtggtttaa atgggtcttat 3050  
 gtatataggg gaaactggga gaacttagga tcttaaaaaa ccatttaata 3100  
 aaaaaaatc tttgaaggga c 3121

<210> 7  
 <211> 830  
 <212> PRT  
 <213> Homo sapiens

<400> 7  
 Met Glu Gln Tyr Lys Leu Gln Ser Asp Arg Leu Arg Glu Gln Gln  
 1 5 10 15  
 Glu Glu Met Val Glu Leu Arg Leu Arg Leu Glu Leu Val Arg Pro  
 20 25 30  
 Gly Trp Gly Gly Leu Arg Leu Leu Asn Gly Leu Pro Pro Gly Ser  
 35 40 45  
 Phe Val Pro Arg Pro His Thr Ala Pro Leu Gly Gly Ala His Ala  
 50 55 60  
 His Val Leu Gly Met Val Pro Pro Ala Cys Leu Pro Gly Asp Glu  
 65 70 75  
 Val Gly Ser Glu Gln Arg Gly Glu Gln Val Thr Asn Gly Arg Glu  
 80 85 90  
 Ala Gly Ala Glu Leu Leu Thr Glu Val Asn Arg Leu Gly Ser Gly  
 95 100 105

Ser Ser Ala Ala	Ser Glu Glu Glu Glu Glu Glu Glu	Pro Pro
110	115	120
Arg Arg Thr Leu	His Leu Arg Arg Asn Arg Ile Ser Asn Cys Ser	
125	130	135
Gln Arg Ala Gly	Ala Arg Pro Gly Ser Leu Pro Glu Arg Lys Gly	
140	145	150
Pro Glu Leu Cys	Leu Glu Glu Leu Asp Ala Ala Ile Pro Gly Ser	
155	160	165
Arg Ala Val Gly	Gly Ser Lys Ala Arg Val Gln Ala Arg Gln Val	
170	175	180
Pro Pro Ala Thr	Ala Ser Glu Trp Arg Leu Ala Gln Ala Gln Gln	
185	190	195
Lys Ile Arg Glu	Leu Ala Ile Asn Ile Arg Met Lys Glu Glu Leu	
200	205	210
Ile Gly Glu Leu	Val Arg Thr Gly Lys Ala Ala Gln Ala Leu Asn	
215	220	225
Arg Gln His Ser	Gln Arg Ile Arg Glu Leu Glu Gln Glu Ala Glu	
230	235	240
Gln Val Arg Ala	Glu Leu Ser Glu Gly Gln Arg Gln Leu Arg Glu	
245	250	255
Leu Glu Gly Lys	Glu Leu Gln Asp Ala Gly Glu Arg Ser Arg Leu	
260	265	270
Gln Glu Phe Arg	Arg Arg Val Ala Ala Ala Gln Ser Gln Val Gln	
275	280	285
Val Leu Lys Glu	Lys Lys Gln Ala Thr Glu Arg Leu Val Ser Leu	
290	295	300
Ser Ala Gln Ser	Glu Lys Arg Leu Gln Glu Leu Glu Arg Asn Val	
305	310	315
Gln Leu Met Arg	Gln Gln Gln Gly Gln Leu Gln Arg Arg Leu Arg	
320	325	330
Glu Glu Thr Glu	Gln Lys Arg Arg Leu Glu Ala Glu Met Ser Lys	
335	340	345
Arg Gln His Arg	Val Lys Glu Leu Glu Leu Lys His Glu Gln Gln	
350	355	360
Gln Lys Ile Leu	Lys Ile Lys Thr Glu Glu Ile Ala Ala Phe Gln	
365	370	375
Arg Lys Arg Arg	Ser Gly Ser Asn Gly Ser Val Val Ser Leu Glu	
380	385	390
Gln Gln Gln Lys	Ile Glu Glu Gln Lys Lys Trp Leu Asp Gln Glu	





Asn	Gln	Glu	Leu	Lys	Gln	Lys	Leu	Gly	Gly	Val	Asn	Ala	Val	Gly	695	700	705
His	Ser	Arg	Gly	Gly	Glu	Lys	Arg	Ser	Leu	Cys	Ser	Glu	Gly	Arg	710	715	720
Gln	Ala	Pro	Gly	Asn	Glu	Asp	Glu	Leu	His	Leu	Ala	Pro	Glu	Leu	725	730	735
Leu	Trp	Leu	Ser	Pro	Leu	Thr	Glu	Gly	Ala	Pro	Arg	Thr	Arg	Glu	740	745	750
Glu	Thr	Arg	Asp	Leu	Val	His	Ala	Pro	Leu	Pro	Leu	Thr	Trp	Lys	755	760	765
Arg	Ser	Ser	Leu	Cys	Gly	Glu	Glu	Gln	Gly	Ser	Pro	Glu	Glu	Leu	770	775	780
Arg	Gln	Arg	Glu	Ala	Ala	Glu	Pro	Leu	Val	Gly	Arg	Val	Leu	Pro	785	790	795
Val	Gly	Glu	Ala	Gly	Leu	Pro	Trp	Asn	Phe	Gly	Pro	Leu	Ser	Lys	800	805	810
Pro	Arg	Arg	Glu	Leu	Arg	Arg	Ala	Ser	Pro	Gly	Met	Ile	Asp	Val	815	820	825
Arg	Lys	Asn	Pro	Leu											830		

<210> 8  
 <211> 662  
 <212> DNA  
 <213> Homo sapiens

<400> 8  
 attctcctag agcatctttg gaagcatgag gccacgatgc tgcattcttg 50  
 ctcttgctctg ctggataaca gtcttctctc tccagtgttc aaaaggaact 100  
 acagacgctc ctgttggtc aggactgtgg ctgtgccagc cgacaccag 150  
 gtgtgggaac aagatctaca acccttcaga gcagtgtgt tatgatgatg 200  
 ccatcttatt cttaaaggag accgcgct gtggctccac ctgcaccttc 250  
 tggccttgc ttgagctctg ctgtcccgag tcttttgcc cccagcagaa 300  
 gtttcttgag aagttgagg ttctgggtat gaagtctcag tgtcacttat 350  
 ctcccatctc ccggagctgt accaggaaca ggaggcacgt cctgtaccca 400  
 taaaaacccc aggtccact ggcagacggc agacaagggg agaagagacg 450  
 aagcagctgg acatcgga ctacagttga acttcggaga gaagcaactt 500  
 gacttcagag ggatggctca atgacatagc tttggagagg agcccagctg 550

gggatggcca gacttcaggg gaagaatgcc ttectgcttc atcccccttc 600  
 cagctccccct tcccgtgag agccactttc atcggcaata aaatccccca 650  
 catttaccat ct 662

<210> 9  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 9  
 Met Arg Pro Arg Cys Cys Ile Leu Ala Leu Val Cys Trp Ile Thr  
 1 5 10 15  
 Val Phe Leu Leu Gln Cys Ser Lys Gly Thr Thr Asp Ala Pro Val  
 20 25 30  
 Gly Ser Gly Leu Trp Leu Cys Gln Pro Thr Pro Arg Cys Gly Asn  
 35 40 45  
 Lys Ile Tyr Asn Pro Ser Glu Gln Cys Cys Tyr Asp Asp Ala Ile  
 50 55 60  
 Leu Ser Leu Lys Glu Thr Arg Arg Cys Gly Ser Thr Cys Thr Phe  
 65 70 75  
 Trp Pro Cys Phe Glu Leu Cys Cys Pro Glu Ser Phe Gly Pro Gln  
 80 85 90  
 Gln Lys Phe Leu Val Lys Leu Arg Val Leu Gly Met Lys Ser Gln  
 95 100 105  
 Cys His Leu Ser Pro Ile Ser Arg Ser Cys Thr Arg Asn Arg Arg  
 110 115 120  
 His Val Leu Tyr Pro  
 125

<210> 10  
 <211> 1942  
 <212> DNA  
 <213> Homo sapiens

<400> 10  
 cccacgcgtc cgcccacgcg tccgggtgcc actcgcgcgc cgcccgcgct 50  
 cggggcttct cttttccctc cgacgcgcca cggtgcccga gacattccgg 100  
 ctgccgggtc tggagagctc cccgaacccc tccgcggaga ggagcgaggc 150  
 ggcgccaggg tggcccccg ggcgcgcttg gtctcggaga agcggggacg 200  
 aggccggagg atgagcgact gagggcgacg cgggcactga cgcgagttgg 250  
 ggccgcgact accggcagct gacagcgcga tgagcgactc cccagagacg 300  
 ccctagcccc gtgtgcgcgc caggcggagc gcgcaggtgg ggctgggctg 350



agtacacaaa agtacactat tatatatcaa atgtatttct ataatccctc 1850

cattagagag cttatataag tgttttctat agatgcagat taaaaatgct 1900

gtgttggtcaa ccgtcaaaaa aaaaaaaaaa aaaaaaaaaa aa 1942

<210> 11

<211> 325

<212> PRT

<213> Homo sapiens

<400> 11

Met Pro Ser Ser Thr Ala Met Ala Val Gly Ala Leu Ser Ser Ser  
1 5 10 15

Leu Leu Val Thr Cys Cys Leu Met Val Ala Leu Cys Ser Pro Ser  
20 25 30

Ile Pro Leu Glu Lys Leu Ala Gln Ala Pro Glu Gln Pro Gly Gln  
35 40 45

Glu Lys Arg Glu His Ala Thr Arg Asp Gly Pro Gly Arg Val Asn  
50 55 60

Glu Leu Gly Arg Pro Ala Arg Asp Glu Gly Gly Ser Gly Arg Asp  
65 70 75

Trp Lys Ser Lys Ser Gly Arg Gly Leu Ala Gly Arg Glu Pro Trp  
80 85 90

Ser Lys Leu Lys Gln Ala Trp Val Ser Gln Gly Gly Gly Ala Lys  
95 100 105

Ala Gly Asp Leu Gln Val Arg Pro Arg Gly Asp Thr Pro Gln Ala  
110 115 120

Glu Ala Leu Ala Ala Ala Ala Gln Asp Ala Ile Gly Pro Glu Leu  
125 130 135

Ala Pro Thr Pro Glu Pro Pro Glu Glu Tyr Val Tyr Pro Asp Tyr  
140 145 150

Arg Gly Lys Gly Cys Val Asp Glu Ser Gly Phe Val Tyr Ala Ile  
155 160 165

Gly Glu Lys Phe Ala Pro Gly Pro Ser Ala Cys Pro Cys Leu Cys  
170 175 180

Thr Glu Glu Gly Pro Leu Cys Ala Gln Pro Glu Cys Pro Arg Leu  
185 190 195

His Pro Arg Cys Ile His Val Asp Thr Ser Gln Cys Cys Pro Gln  
200 205 210

Cys Lys Glu Arg Lys Asn Tyr Cys Glu Phe Arg Gly Lys Thr Tyr  
215 220 225

Gln Thr Leu Glu Glu Phe Val Val Ser Pro Cys Glu Arg Cys Arg

230	235	240
Cys Glu Ala Asn Gly Glu Val Leu Cys Thr Val Ser Ala Cys Pro		
245	250	255
Gln Thr Glu Cys Val Asp Pro Val Tyr Glu Pro Asp Gln Cys Cys		
260	265	270
Pro Ile Cys Lys Asn Gly Pro Asn Cys Phe Ala Glu Thr Ala Val		
275	280	285
Ile Pro Ala Gly Arg Glu Val Lys Thr Asp Glu Cys Thr Ile Cys		
290	295	300
His Cys Thr Tyr Glu Glu Gly Thr Trp Arg Ile Glu Arg Gln Ala		
305	310	315
Met Cys Thr Arg His Glu Cys Arg Gln Met		
320	325	

<210> 12  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 12  
 gaggtgtcgc tgtgaagcca acgg 24

<210> 13  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 13  
 cgctcgattc tccatgtgcc ttcc 24

<210> 14  
 <211> 45  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 14  
 gacggagtgt gtggaccctg tgtacgagcc tgatcagtgc tgtcc 45

<210> 15  
 <211> 1587  
 <212> DNA  
 <213> Homo sapiens

<400> 15

cagccacaga cgggtcatga gcgcggtatt actgctggcc ctctgggggt 50  
tcctcctccc actgccagga gtgcaggcgc tgctctgcca gtttgggaca 100  
gttcagcatg tgtggaaggt gtccgacctc ccccggaat ggaccctaa 150  
gaacaccagc tgcgacagcg gcttgggggtg ccaggacacg ttgatgetca 200  
ttgagagcgg accccaagtg agcctgggtc tctccaaggg ctgcacggag 250  
gccaaaggacc aggagccccg cgtcactgag caccggatgg gccccggcct 300  
ctccctgata tctacacct tegtgtgccg ccaggaggac ttctgcaaca 350  
acctcgtaa ctccctcccg ctttggggcc cacagcccc agcagacca 400  
ggatccttga ggtgccagc ctgcttctct atggaaggct gtctggaggg 450  
gacaacagaa gagatctgcc ccaaggggac cacacactgt tatgatggcc 500  
tcctcagget caggggagga ggcattctct ccaatctgag agtccaggga 550  
tgcatgcccc agccaggttg caacctgctc aatgggacac aggaaattgg 600  
gcccgtgggt atgactgaga actgcaatag gaaagatttt ctgacctgtc 650  
atcgggggac caccattatg acacacggaa acttggctca agaaccact 700  
gattggacca catcgaatac cgagatgtgc gagtgggggc aggtgtgtca 750  
ggagacgctg ctgctcatag atgtaggact cacatcaacc ctgggtgggga 800  
caaaaggctg cagcactgtt ggggctcaaa attcccagaa gaccaccatc 850  
cactcagccc ctctgggggt gcttgtggcc tctataccc acttctgtctc 900  
ctcggacctg tgcaatagtg ccagcagcag cagcgttctg ctgaactccc 950  
tcctcctca agctgcccct gtcccaggag accggcagtg tctacctgt 1000  
gtgcagcccc ttggaacctg ttcaagtggc tcccccgaa tgacctgcc 1050  
cagggcgccc actcattgtt atgatgggtc cattcatctc tcaggaggtg 1100  
ggctgtccac caaaatgagc attcagggtc gcgtggccca acctccagc 1150  
ttcttgttga accacaccag acaaatcggg atcttctctg cgcgtgagaa 1200  
gcgtgatgtg cagcctctg cctctcagca tgaggaggt ggggctgagg 1250  
gcctggagtc tctcacttg ggggtggggc tggcactggc cccagcgtg 1300  
tggtggggag tggtttgccc ttctgtctaa ctctattacc cccacgatc 1350  
ttcaccgctg ctgaccacc aactcaacc tccctctgac ctcataacct 1400  
aatggccttg gacaccagat tcttcccat tctgtccatg aatcatcttc 1450

cccacacaca atcattcata tctactcacc taacagcaac actggggaga 1500  
gcttgaggca tccggacttg ccttatggga gaggggacgc tggaggagtg 1550  
gctgcatgta tctgataata cagaccctgt cctttca 1587

<210> 16  
<211> 437  
<212> PRT  
<213> Homo sapiens

<400> 16

Met	Ser	Ala	Val	Leu	Leu	Leu	Ala	Leu	Leu	Gly	Phe	Ile	Leu	Pro	1	5	10	15
Leu	Pro	Gly	Val	Gln	Ala	Leu	Leu	Cys	Gln	Phe	Gly	Thr	Val	Gln	20	25	30	
His	Val	Trp	Lys	Val	Ser	Asp	Leu	Pro	Arg	Gln	Trp	Thr	Pro	Lys	35	40	45	
Asn	Thr	Ser	Cys	Asp	Ser	Gly	Leu	Gly	Cys	Gln	Asp	Thr	Leu	Met	50	55	60	
Leu	Ile	Glu	Ser	Gly	Pro	Gln	Val	Ser	Leu	Val	Leu	Ser	Lys	Gly	65	70	75	
Cys	Thr	Glu	Ala	Lys	Asp	Gln	Glu	Pro	Arg	Val	Thr	Glu	His	Arg	80	85	90	
Met	Gly	Pro	Gly	Leu	Ser	Leu	Ile	Ser	Tyr	Thr	Phe	Val	Cys	Arg	95	100	105	
Gln	Glu	Asp	Phe	Cys	Asn	Asn	Leu	Val	Asn	Ser	Leu	Pro	Leu	Trp	110	115	120	
Ala	Pro	Gln	Pro	Pro	Ala	Asp	Pro	Gly	Ser	Leu	Arg	Cys	Pro	Val	125	130	135	
Cys	Leu	Ser	Met	Glu	Gly	Cys	Leu	Glu	Gly	Thr	Thr	Glu	Glu	Ile	140	145	150	
Cys	Pro	Lys	Gly	Thr	Thr	His	Cys	Tyr	Asp	Gly	Leu	Leu	Arg	Leu	155	160	165	
Arg	Gly	Gly	Gly	Ile	Phe	Ser	Asn	Leu	Arg	Val	Gln	Gly	Cys	Met	170	175	180	
Pro	Gln	Pro	Gly	Cys	Asn	Leu	Leu	Asn	Gly	Thr	Gln	Glu	Ile	Gly	185	190	195	
Pro	Val	Gly	Met	Thr	Glu	Asn	Cys	Asn	Arg	Lys	Asp	Phe	Leu	Thr	200	205	210	
Cys	His	Arg	Gly	Thr	Thr	Ile	Met	Thr	His	Gly	Asn	Leu	Ala	Gln	215	220	225	
Glu	Pro	Thr	Asp	Trp	Thr	Thr	Ser	Asn	Thr	Glu	Met	Cys	Glu	Val				



230	235	240
Gly Gln Val Cys Gln Glu Thr Leu Leu Leu Ile Asp Val Gly Leu		
245	250	255
Thr Ser Thr Leu Val Gly Thr Lys Gly Cys Ser Thr Val Gly Ala		
260	265	270
Gln Asn Ser Gln Lys Thr Thr Ile His Ser Ala Pro Pro Gly Val		
275	280	285
Leu Val Ala Ser Tyr Thr His Phe Cys Ser Ser Asp Leu Cys Asn		
290	295	300
Ser Ala Ser Ser Ser Ser Val Leu Leu Asn Ser Leu Pro Pro Gln		
305	310	315
Ala Ala Pro Val Pro Gly Asp Arg Gln Cys Pro Thr Cys Val Gln		
320	325	330
Pro Leu Gly Thr Cys Ser Ser Gly Ser Pro Arg Met Thr Cys Pro		
335	340	345
Arg Gly Ala Thr His Cys Tyr Asp Gly Tyr Ile His Leu Ser Gly		
350	355	360
Gly Gly Leu Ser Thr Lys Met Ser Ile Gln Gly Cys Val Ala Gln		
365	370	375
Pro Ser Ser Phe Leu Leu Asn His Thr Arg Gln Ile Gly Ile Phe		
380	385	390
Ser Ala Arg Glu Lys Arg Asp Val Gln Pro Pro Ala Ser Gln His		
395	400	405
Glu Gly Gly Gly Ala Glu Gly Leu Glu Ser Leu Thr Trp Gly Val		
410	415	420
Gly Leu Ala Leu Ala Pro Ala Leu Trp Trp Gly Val Val Cys Pro		
425	430	435

Ser Cys

<210> 17

<211> 2387

<212> DNA

<213> Homo sapiens

<400> 17

```

cgacgatgct acgcgcgccc ggctgcctcc tccggacctc cgtagcgct 50
gcgcggcccc tggtgcgggc gctgctctcg tcgcttgccg gctgctctct 100
tctagagccg agggaccccg tggcctcgtc gctcagcccc tatttcggca 150
ccaagactcg ctacgaggat gtcaaccccg tgctattgtc gggccccgag 200

```



ctggagcagc tctcttaagg agaaacaaat ctatttagag aaacagctgg 1700  
 cccctgcaaat gtttacagaa atgaaattct tcctacttat ataagaaatc 1750  
 tcacactgag atagaattgt gatttcataa taacacttga aaagtgtctg 1800  
 agtaacaaaa tatctcagtt ggaccatcct taacttgatt gaactgtcta 1850  
 ggaactttac agattgttct gcagttctct cttcttttcc tcaggtagga 1900  
 cagctctagc attttcttaa tcaggaatat tgttggaagc tgggagtatc 1950  
 actctggaag aaagtaacat ctccagatga gaatttgaaa caagaaacag 2000  
 agtgttgtaa aaggacacct tcaactgaagc aagtcggaaa gtacaatgaa 2050  
 aataaatatt tttggtattt atttatgaaa tatttgaaca ttttttcaat 2100  
 aattcctttt tacttctagg aagtctcaaa agaccatctt aaattattat 2150  
 atgtttggac aattagcaac aagtcagata gttagaatcg aagtttttca 2200  
 aatccattgc ttagctaact ttttcattct gtcacttggc ttogattttt 2250  
 atattttcct attatatgaa atgtatcttt tggttgtttg atttttcttt 2300  
 ctttctttgt aaatagttct gagttctgtc aaatgccgtg aaagtatttg 2350  
 ctataataaa gaaaattctt gtgactttaa aaaaaaa 2387

<210> 18

<211> 487

<212> PRT

<213> Homo sapiens

<400> 18

Met	Leu	Arg	Ala	Pro	Gly	Cys	Leu	Leu	Arg	Thr	Ser	Val	Ala	Pro
1				5					10					15
Ala	Ala	Ala	Leu	Ala	Ala	Ala	Leu	Leu	Ser	Ser	Leu	Ala	Arg	Cys
			20						25					30
Ser	Leu	Leu	Glu	Pro	Arg	Asp	Pro	Val	Ala	Ser	Ser	Leu	Ser	Pro
			35						40					45
Tyr	Phe	Gly	Thr	Lys	Thr	Arg	Tyr	Glu	Asp	Val	Asn	Pro	Val	Leu
			50						55					60
Leu	Ser	Gly	Pro	Glu	Ala	Pro	Trp	Arg	Asp	Pro	Glu	Leu	Leu	Glu
			65						70					75
Gly	Thr	Cys	Thr	Pro	Val	Gln	Leu	Val	Ala	Leu	Ile	Arg	His	Gly
			80						85					90
Thr	Arg	Tyr	Pro	Thr	Val	Lys	Gln	Ile	Arg	Lys	Leu	Arg	Gln	Leu
			95						100					105
His	Gly	Leu	Leu	Gln	Ala	Arg	Gly	Ser	Arg	Asp	Gly	Gly	Ala	Ser

110	115	120
Ser Thr Gly Ser Arg Asp Leu Gly Ala	Ala Leu Ala Asp Trp Pro	
125	130	135
Leu Trp Tyr Ala Asp Trp Met Asp Gly	Gln Leu Val Glu Lys Gly	
140	145	150
Arg Gln Asp Met Arg Gln Leu Ala Leu	Arg Leu Ala Ser Leu Phe	
155	160	165
Pro Ala Leu Phe Ser Arg Glu Asn Tyr	Gly Arg Leu Arg Leu Ile	
170	175	180
Thr Ser Ser Lys His Arg Cys Met Asp	Ser Ser Ala Ala Phe Leu	
185	190	195
Gln Gly Leu Trp Gln His Tyr His Pro	Gly Leu Pro Pro Pro Asp	
200	205	210
Val Ala Asp Met Glu Phe Gly Pro Pro	Thr Val Asn Asp Lys Leu	
215	220	225
Met Arg Phe Phe Asp His Cys Glu Lys	Phe Leu Thr Glu Val Glu	
230	235	240
Lys Asn Ala Thr Ala Leu Tyr His Val	Glu Ala Phe Lys Thr Gly	
245	250	255
Pro Glu Met Gln Asn Ile Leu Lys Lys	Val Ala Ala Thr Leu Gln	
260	265	270
Val Pro Val Asn Asp Leu Asn Ala Asp	Leu Ile Gln Val Ala Phe	
275	280	285
Phe Thr Cys Ser Phe Asp Leu Ala Ile	Lys Gly Val Lys Ser Pro	
290	295	300
Trp Cys Asp Val Phe Asp Ile Asp Asp	Ala Lys Val Leu Glu Tyr	
305	310	315
Leu Asn Asp Leu Lys Gln Tyr Trp Lys	Arg Gly Tyr Gly Tyr Thr	
320	325	330
Ile Asn Ser Arg Ser Ser Cys Thr Leu	Phe Gln Asp Ile Phe Gln	
335	340	345
His Leu Asp Lys Ala Val Glu Gln Lys	Gln Arg Ser Gln Pro Ile	
350	355	360
Ser Ser Pro Val Ile Leu Gln Phe Gly	His Ala Glu Thr Leu Leu	
365	370	375
Pro Leu Leu Ser Leu Met Gly Tyr Phe	Lys Asp Lys Glu Pro Leu	
380	385	390
Thr Ala Tyr Asn Tyr Lys Lys Gln Met	His Arg Lys Phe Arg Ser	
395	400	405

Gly	Leu	Ile	Val	Pro	Tyr	Ala	Ser	Asn	Leu	Ile	Phe	Val	Leu	Tyr	410	415	420
His	Cys	Glu	Asn	Ala	Lys	Thr	Pro	Lys	Glu	Gln	Phe	Arg	Val	Gln	425	430	435
Met	Leu	Leu	Asn	Glu	Lys	Val	Leu	Pro	Leu	Ala	Tyr	Ser	Gln	Glu	440	445	450
Thr	Val	Ser	Phe	Tyr	Glu	Asp	Leu	Lys	Asn	His	Tyr	Lys	Asp	Ile	455	460	465
Leu	Gln	Ser	Cys	Gln	Thr	Ser	Glu	Glu	Cys	Glu	Leu	Ala	Arg	Ala	470	475	480
Asn	Ser	Thr	Ser	Asp	Glu	Leu									485		

<210> 19  
 <211> 3554  
 <212> DNA  
 <213> Homo sapiens

<400> 19  
 gggactacaa gccgcgccgc gctgccgctg gcccctcagc aacctcgac 50  
 atggcgctga ggccggccacc gcgactccgg ctctgcgctc ggctgcctga 100  
 cttcttctctg ctgctgcttt tcaggggctg cctgataggg gctgtaaatc 150  
 tcaaattccag caatcgaacc ccagtgggtac aggaatttga aagtgtggaa 200  
 ctgtcttgca tcattacgga ttcgcagaca agtgacccca ggatcgagtg 250  
 gaagaaaatt caagatgaac aaaccacata tgtgtttttt gacaacaaaa 300  
 ttcagggaga cttggcgggt cgtgcagaaa tactggggaa gacatccctg 350  
 aagatctgga atgtgacacg gagagactca gccctttatc gctgtgaggt 400  
 cgttgctcga aatgaccgca aggaaattga tgagattgtg atcgagttaa 450  
 ctgtgcaagt gaagccagtg acccctgtct gtagagtgcc gaaggctgta 500  
 ccagtaggca agatggcaac actgcactgc caggagagtg agggccaccc 550  
 ccggcctcac tacagctggt atcgcaatga tgtaccactg cccacggatt 600  
 ccagagccaa tcccagattt cgcaattctt ctttccactt aaactctgaa 650  
 acaggcactt tgggtgttcac tgetgttcac aaggacgact ctgggcagta 700  
 ctactgcatt gttccaatg acgcaggctc agccagggtg gaggagcagg 750  
 agatggaagt ctatgacctg aacattggcg gaattattgg gggggttctg 800  
 gttgtccttg ctgtactggc cctgatcacg ttgggcatct gctgtgcata 850



-11- 0000 0000 0000 0000 00 00 0000 0000  
 0000 0000 0000 0000 00 00 0000 0000  
 00 0000 0000 0000 00 00 0000 0000  
 00 0000 0000 0000 00 00 0000 0000  
 -11- 0000 0000 0000 0000 00 00 0000 0000  
 00 0000 0000 0000 00 00 0000 0000  
 00 0000 0000 0000 00 00 0000 0000  
 00 0000 0000 0000 00 00 0000 0000

tggcccttgc ttcattccagc acagctctca ggtgggcact gcagggacac 2350  
 tgggtgtcttc catgtagcgt cccagctttg ggctcctgta acagacctct 2400  
 ttttggttat ggatggctca caaaataggg cccccaatgc tatttttttt 2450  
 ttttaagttt gtttaattat ttgttaagat tgtctaaggc caaaggcaat 2500  
 tgcgaaatca agtctgtcaa gtacaataac atttttaaaa gaaaatggat 2550  
 cccactgttc ctctttgccca cagagaaagc acccagacgc cacaggetct 2600  
 gtgcatttcc aaaacaaacc atgatggagt ggcgccagc ccagcctttt 2650  
 aaagaacgtc aggtggagca gccaggtgaa aggcctggcg gggaggaaag 2700  
 tgaaacgcct gaatcaaaag cagttttcta attttgactt taaatttttc 2750  
 atccgccgga gacactgttc ccatttgttg ggggacatta gcaacatcac 2800  
 tcagaagcct gtgttcttca agagcagggtg ttctcagcct cacatgccct 2850  
 gccgtgctgg actcaggact gaagtgtgtt aaagcaagga gctgctgaga 2900  
 aggagcactc cactgtgtgc ctggagaatg gctctcacta ctcaccttgt 2950  
 ctttcagctt ccagtgtctt gggtttttta tactttgaca gctttttttt 3000  
 aattgcatac atgagactgt gttgactttt tttagttatg tgaaacactt 3050  
 tgccgcaggc cgctggcag aggcaggaaa tgctccagca gtggctcagt 3100  
 gctccctggg gtctgtctga tggcatcctg gatgcttagc atgcaagtcc 3150  
 cctccatcat tgccaccttg gtagagaggg atggctcccc accctcagcg 3200  
 ttggggattc acgctccagc ctcttctttg gttgtcatag tgatagggtta 3250  
 gccttattgc cccctcttct tataacctaa aacctctctac actagtgccca 3300  
 tgggaaccag gtctgaaaaa gtagagagaa gtgaaagtag agtctgggaa 3350  
 gtagctgcct ataactgaga ctagaaggaa aaggaatact cgtgtatttt 3400  
 aagatatgaa tgtgactcaa gactcgaggg cgatacgagg ctgtgattct 3450  
 gcctttggat ggatgttgct gtacacagat gctacagact tgtactaaca 3500  
 caccgtaatt tggcatttgt ttaacctcat ttataaaagc ttcaaaaaaa 3550  
 ccca 3554

<210> 20  
 <211> 310  
 <212> PRT  
 <213> Homo sapiens  
 <400> 20

Met	Ala	Leu	Arg	Arg	Pro	Pro	Arg	Leu	Arg	Leu	Cys	Ala	Arg	Leu	1	5	10	15
Pro	Asp	Phe	Phe	Leu	Leu	Leu	Phe	Arg	Gly	Cys	Leu	Ile	Gly	20	25	30		
Ala	Val	Asn	Leu	Lys	Ser	Ser	Asn	Arg	Thr	Pro	Val	Val	Gln	Glu	35	40	45	
Phe	Glu	Ser	Val	Glu	Leu	Ser	Cys	Ile	Ile	Thr	Asp	Ser	Gln	Thr	50	55	60	
Ser	Asp	Pro	Arg	Ile	Glu	Trp	Lys	Lys	Ile	Gln	Asp	Glu	Gln	Thr	65	70	75	
Thr	Tyr	Val	Phe	Phe	Asp	Asn	Lys	Ile	Gln	Gly	Asp	Leu	Ala	Gly	80	85	90	
Arg	Ala	Glu	Ile	Leu	Gly	Lys	Thr	Ser	Leu	Lys	Ile	Trp	Asn	Val	95	100	105	
Thr	Arg	Arg	Asp	Ser	Ala	Leu	Tyr	Arg	Cys	Glu	Val	Val	Ala	Arg	110	115	120	
Asn	Asp	Arg	Lys	Glu	Ile	Asp	Glu	Ile	Val	Ile	Glu	Leu	Thr	Val	125	130	135	
Gln	Val	Lys	Pro	Val	Thr	Pro	Val	Cys	Arg	Val	Pro	Lys	Ala	Val	140	145	150	
Pro	Val	Gly	Lys	Met	Ala	Thr	Leu	His	Cys	Gln	Glu	Ser	Glu	Gly	155	160	165	
His	Pro	Arg	Pro	His	Tyr	Ser	Trp	Tyr	Arg	Asn	Asp	Val	Pro	Leu	170	175	180	
Pro	Thr	Asp	Ser	Arg	Ala	Asn	Pro	Arg	Phe	Arg	Asn	Ser	Ser	Phe	185	190	195	
His	Leu	Asn	Ser	Glu	Thr	Gly	Thr	Leu	Val	Phe	Thr	Ala	Val	His	200	205	210	
Lys	Asp	Asp	Ser	Gly	Gln	Tyr	Tyr	Cys	Ile	Ala	Ser	Asn	Asp	Ala	215	220	225	
Gly	Ser	Ala	Arg	Cys	Glu	Glu	Gln	Glu	Met	Glu	Val	Tyr	Asp	Leu	230	235	240	
Asn	Ile	Gly	Gly	Ile	Ile	Gly	Gly	Val	Leu	Val	Val	Leu	Ala	Val	245	250	255	
Leu	Ala	Leu	Ile	Thr	Leu	Gly	Ile	Cys	Cys	Ala	Tyr	Arg	Arg	Gly	260	265	270	
Tyr	Phe	Ile	Asn	Asn	Lys	Gln	Asp	Gly	Glu	Ser	Tyr	Lys	Asn	Pro	275	280	285	
Gly	Lys	Pro	Asp	Gly	Val	Asn	Tyr	Ile	Arg	Thr	Asp	Glu	Glu	Gly				



290

295

300

Asp Phe Arg His Lys Ser Ser Phe Val Ile  
305 310

&lt;210&gt; 21

&lt;211&gt; 3437

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 21

caggaccagg tcttctacg ctggagcagc ggggagacag ccaccatgca 50  
catcctcgtg gtccatgcc a tggatgacct gctgacgctg ggcccgcctc 100  
gagccgacga cagcgagttc caggcgctgc tggacatctg gtttccggag 150  
gagaagccac tgcccaccgc cttcctgggtg gacacatcgg aggaggcgct 200  
gotgcttct gactggctga agctgcgcat gatccgttct gaggtgctcc 250  
gcctgggtgga cgcgcgcctg caggacctgg agccgcagca gctgctgctg 300  
ttcgtgcagt cgtttggcat ccccggtgtcc agcatgagca aactcctcca 350  
gttctctggac caggcagtgg ccacgacccc ccagactctg gagcagaaca 400  
tcatggacaa gaattacatg gccacactgg tggagggtcca gcatgagcgc 450  
ggcgccctcg gaggccagac tttccactcc ttgctcacag cctccctgcc 500  
gccccgccga gacagcacag aggcacccaa accaaagagc agcccagagc 550  
agcccatagg ccaggggccgg attcgggtgg ggaccagct ccgggtgctg 600  
ggccctgagg acgacctggc tggcatgttc ctccagattt tcccgtctag 650  
cccggacctt cgggtggcaga gctccagtc cgcggccgtg gccctcgccc 700  
tgcagcaggc cctgggccag gagctggccc gcgtcgtcca gggcagcccc 750  
gaggtgccgg gcatcacggt gcgtgtcctg caggccctcg ccacctgct 800  
cagctcccca cagggcggtg cctgggtgat gtccatgcac cgtagccact 850  
tctggcctg cccgtgctg cgcagctct gccagtacca gcgtgtgtg 900  
ccacaggaca ccggcttct ctcgtctct ctgaagggtg tctgcagat 950  
gctgcagtgg ctggacagcc ctggcggtg gggcgggccc ctgcgggcac 1000  
agctcaggat gcttgccagc caggcctcag ccggggcgag gctcagtgat 1050  
gtgcgagggg ggctcctgcg cctggccgag gccctggcct tccgtcagga 1100  
cctggaggtg gtcagctcca ccgtccgtgc cgtcctcgcc accctgaggt 1150  
ctggggagca gtgcagcgtg gagccggacc tgatcagcaa agtcctccag 1200



ccttgccccct ggtcagcgtc tccctgttca cccctctgac cgcggcgag 2700  
 atggccccct acatgaaacg gctttcccgg ggccaaacgg tggaggatct 2750  
 gctggagggtt ctgagtgaca tagacgagat gtcccggcgg agaccogaga 2800  
 tccctgagctt cttctcgacc aacctgcagc ggctgatgag ctcgggcgag 2850  
 gagtgttgcc gcaacctcgc cttcagcctg gccctgcgct ccatgcagaa 2900  
 cagccccagc attgcagccg ctttctgccc caggttcatg tactgcctgg 2950  
 gcagccagga ctttgagggtg gtgcagacgg ccctccggaa cctgcctgag 3000  
 tacgctctcc tgtgccaaga gcacgcggct gtgctgctcc accgggcctt 3050  
 cctgggtgggc atgtacggcc agatggaccc cagcgcgcag atctccgagg 3100  
 ccctgaggat cctgcatatg gagggcgtga tgtgagcctg tggcagccga 3150  
 cccccctcca agccccggcc cgtcccgctc ccgggggatcc tcgaggcaaa 3200  
 gcccaggaag cgtgggcgtt gctggtctgt ccgaggaggt gagggcgccg 3250  
 agccctgagg ccaggcaggc ccaggagcaa tactccgagc cctgggggtgg 3300  
 ctccgggccc gccgctggca tcaggggccc tccagcaagc cctcattcac 3350  
 cttctggggc acagccctgc cgcggagcgg cggatcccc cgggcatggc 3400  
 ctgggctggt tttgaatgaa acgacctgaa ctgtcaa 3437

<210> 22

<211> 1029

<212> PRT

<213> Homo sapiens

<400> 22

Met	His	Ile	Leu	Val	Val	His	Ala	Met	Val	Ile	Leu	Leu	Thr	Leu
1				5					10					15
Gly	Pro	Pro	Arg	Ala	Asp	Asp	Ser	Glu	Phe	Gln	Ala	Leu	Leu	Asp
			20						25					30
Ile	Trp	Phe	Pro	Glu	Glu	Lys	Pro	Leu	Pro	Thr	Ala	Phe	Leu	Val
			35						40					45
Asp	Thr	Ser	Glu	Glu	Ala	Leu	Leu	Leu	Pro	Asp	Trp	Leu	Lys	Leu
			50						55					60
Arg	Met	Ile	Arg	Ser	Glu	Val	Leu	Arg	Leu	Val	Asp	Ala	Ala	Leu
			65						70					75
Gln	Asp	Leu	Glu	Pro	Gln	Gln	Leu	Leu	Leu	Phe	Val	Gln	Ser	Phe
			80						85					90
Gly	Ile	Pro	Val	Ser	Ser	Met	Ser	Lys	Leu	Leu	Gln	Phe	Leu	Asp
			95						100					105

Gln Ala Val Ala His Asp Pro Gln Thr	Leu Glu Gln Asn Ile Met
110	115 120
Asp Lys Asn Tyr Met Ala His Leu Val	Glu Val Gln His Glu Arg
125	130 135
Gly Ala Ser Gly Gly Gln Thr Phe His	Ser Leu Leu Thr Ala Ser
140	145 150
Leu Pro Pro Arg Arg Asp Ser Thr Glu	Ala Pro Lys Pro Lys Ser
155	160 165
Ser Pro Glu Gln Pro Ile Gly Gln Gly	Arg Ile Arg Val Gly Thr
170	175 180
Gln Leu Arg Val Leu Gly Pro Glu Asp	Asp Leu Ala Gly Met Phe
185	190 195
Leu Gln Ile Phe Pro Leu Ser Pro Asp	Pro Arg Trp Gln Ser Ser
200	205 210
Ser Pro Arg Pro Val Ala Leu Ala Leu	Gln Gln Ala Leu Gly Gln
215	220 225
Glu Leu Ala Arg Val Val Gln Gly Ser	Pro Glu Val Pro Gly Ile
230	235 240
Thr Val Arg Val Leu Gln Ala Leu Ala	Thr Leu Leu Ser Ser Pro
245	250 255
His Gly Gly Ala Leu Val Met Ser Met	His Arg Ser His Phe Leu
260	265 270
Ala Cys Pro Leu Leu Arg Gln Leu Cys	Gln Tyr Gln Arg Cys Val
275	280 285
Pro Gln Asp Thr Gly Phe Ser Ser Leu	Phe Leu Lys Val Leu Leu
290	295 300
Gln Met Leu Gln Trp Leu Asp Ser Pro	Gly Val Glu Gly Gly Pro
305	310 315
Leu Arg Ala Gln Leu Arg Met Leu Ala	Ser Gln Ala Ser Ala Gly
320	325 330
Arg Arg Leu Ser Asp Val Arg Gly Gly	Leu Leu Arg Leu Ala Glu
335	340 345
Ala Leu Ala Phe Arg Gln Asp Leu Glu	Val Val Ser Ser Thr Val
350	355 360
Arg Ala Val Ile Ala Thr Leu Arg Ser	Gly Glu Gln Cys Ser Val
365	370 375
Glu Pro Asp Leu Ile Ser Lys Val Leu	Gln Gly Leu Ile Glu Val
380	385 390
Arg Ser Pro His Leu Glu Glu Leu Leu	Thr Ala Phe Phe Ser Ala



Ser Arg Ala Leu Glu Asn Arg Gly Ala Asp Ala Ser Met Ala Cys	695	700	705
Arg Lys Leu Ala Val Ala His Pro Leu Leu Leu Arg His Leu	710	715	720
Pro Met Ile Ala Ala Leu Leu His Gly Arg Thr His Leu Asn Phe	725	730	735
Gln Glu Phe Arg Gln Gln Asn His Leu Ser Cys Phe Leu His Val	740	745	750
Leu Gly Leu Leu Glu Leu Leu Gln Pro His Val Phe Arg Ser Glu	755	760	765
His Gln Gly Ala Leu Trp Asp Cys Leu Leu Ser Phe Ile Arg Leu	770	775	780
Leu Leu Asn Tyr Arg Lys Ser Ser Arg His Leu Ala Ala Phe Ile	785	790	795
Asn Lys Phe Val Gln Phe Ile His Lys Tyr Ile Thr Tyr Asn Ala	800	805	810
Pro Ala Ala Ile Ser Phe Leu Gln Lys His Ala Asp Pro Leu His	815	820	825
Asp Leu Ser Phe Asp Asn Ser Asp Leu Val Met Leu Lys Ser Leu	830	835	840
Leu Ala Gly Leu Ser Leu Pro Ser Arg Asp Asp Arg Thr Asp Arg	845	850	855
Gly Leu Asp Glu Glu Gly Glu Glu Glu Ser Ser Ala Gly Ser Leu	860	865	870
Pro Leu Val Ser Val Ser Leu Phe Thr Pro Leu Thr Ala Ala Glu	875	880	885
Met Ala Pro Tyr Met Lys Arg Leu Ser Arg Gly Gln Thr Val Glu	890	895	900
Asp Leu Leu Glu Val Leu Ser Asp Ile Asp Glu Met Ser Arg Arg	905	910	915
Arg Pro Glu Ile Leu Ser Phe Phe Ser Thr Asn Leu Gln Arg Leu	920	925	930
Met Ser Ser Ala Glu Glu Cys Cys Arg Asn Leu Ala Phe Ser Leu	935	940	945
Ala Leu Arg Ser Met Gln Asn Ser Pro Ser Ile Ala Ala Ala Phe	950	955	960
Leu Pro Thr Phe Met Tyr Cys Leu Gly Ser Gln Asp Phe Glu Val	965	970	975
Val Gln Thr Ala Leu Arg Asn Leu Pro Glu Tyr Ala Leu Leu Cys			

980

985

990

Gln Glu His Ala Ala Val Leu Leu His Arg Ala Phe Leu Val Gly  
 995 1000 1005

Met Tyr Gly Gln Met Asp Pro Ser Ala Gln Ile Ser Glu Ala Leu  
 1010 1015 1020

Arg Ile Leu His Met Glu Ala Val Met  
 1025

&lt;210&gt; 23

&lt;211&gt; 2186

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

ccggggccatg cagcctcggc cccgcggggcg cccgccgcgc acccgaggag 50  
 atgaggctcc gcaatggcac ctctctgacg ctgctgctct tctgcctgtg 100  
 cgccttcctc tcgtgtgctt ggtacgcggc actcagcggc cagaaaggcg 150  
 acgttgtgga cgtttaccag cgggagttcc tggcgctgcg cgatcggttg 200  
 cacgcagctg agcaggagag cctcaagcgc tccaaggagc tcaacctggt 250  
 gctggacgag atcaagaggg cctgtgcaga aaggcaggcg ctgcgagacg 300  
 gagacggcaa tcgcacctgg ggcgcctaa cagaggaccc ccgattgaag 350  
 ccgtggaacg gctcacaccg gcacgtgctg cacctgocca ccgtcttcca 400  
 tcacctgcca cacctgctgg ccaaggagag cagtctgcag cccgcggtgc 450  
 gcgtgggcca gggccgcacc ggagtgtcgg tggatgatgg catcccgagc 500  
 gtgcggcgcg aggtgcactc gtacctgact gacactctgc actcgctcat 550  
 ctccgagctg agcccgagag agaaggagga ctcggtcatc gtggtgctga 600  
 tcgccgagac tgactcacag tacacttcgg cagtgcagga gaacatcaag 650  
 gccttgttcc ccacggagat ccattctggg ctcttgaggg tcattctacc 700  
 ctccccccac ttctacctg acttctcccg cctccgagag tcttttgggg 750  
 accccaagga gagagtcagg tggaggacca aacagaacct cgattactgc 800  
 ttctcatga tgtaacgcga gtccaaaggc atctactacg tgcagctgga 850  
 ggatgacatc gtggccaagc ccaactacct gagcaccatg aagaactttg 900  
 cactgcagca gccttcagag gactggatga tcctggagtt ctccagctg 950  
 ggcttcattg gtaagatgtt caagtcgctg gacctgagcc tgattgtaga 1000  
 gttcattctc atgttctacc gggacaagcc catcgactgg ctcttgagac 1050

atattctgtg ggtgaaagtc tgcaaccccg agaaggatgc gaagcactgt 1100  
 gaccggcaga aagccaacct gcggatccgc ttcaaaccgt ccctcttcca 1150  
 gcaogtgggc actcactcct cgctggctgg caagatccag aaactgaagg 1200  
 acaaagactt tggaaagcag gcgctgcgga aggagcatgt gaacccgcca 1250  
 gcagaggtga gcacgagcct gaagacatac cagcaattca ccctggagaa 1300  
 agcctacctg cgcgaggact tcttctgggc cttcaccctt gccgcggggg 1350  
 acttcatccg cttccgcttc ttccaacctc taagactgga gcggttcttc 1400  
 ttccgcagtg ggaacatcga gcacccggag gacaagctct tcaacacgtc 1450  
 tgtggagggtg ctgccctteg acaacccctca gtcagacaag gaggcctgc 1500  
 aggagggccg caccgccacc ctccgggtacc ctccggagccc cgacggctac 1550  
 ctccagatcg gctccttcta caagggagtg gcagagggag aggtggaccc 1600  
 agccttcggc cctctggaag cactgcgcct ctccatccag acggactccc 1650  
 ctgtgtgggt gattctgagc gagatcttcc tgaaaaaggc cgactaagct 1700  
 gcgggcttct gagggtagcc tgtggccagc cctgaagccc acatttctgg 1750  
 ggggtgtcgtc actgcgcgtc ccggagggcc agatacggcc ccgcccagg 1800  
 gggttctgctt ggcgtcgggc ttgggccggc ctgggggtccg ccgctggccc 1850  
 ggaggcccta ggagctgggt ctgccccgcg ccgcccgggc gcggaggagg 1900  
 caggcggccc ccacactgtg cctgaggccc ggaaccgttc gcacccggcc 1950  
 tgccccagtc aggcggtttt agaagagctt ttacttgggc gcccgccgtc 2000  
 tctggcgaga aacttgaat gcataacta ctttatgtgc tgtgtttttt 2050  
 attcttggat acatttgatt ttttcacgta agtccacata tacttctata 2100  
 agagcgtgac ttgtaataaa gggttaatga agaaaaaaaa aaaaaaaaaa 2150  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2186

<210> 24

<211> 548

<212> PRT

<213> Homo sapiens

<400> 24

Met	Arg	Leu	Arg	Asn	Gly	Thr	Phe	Leu	Thr	Leu	Leu	Leu	Phe	Cys
1				5					10					15
Leu	Cys	Ala	Phe	Leu	Ser	Leu	Ser	Trp	Tyr	Ala	Ala	Leu	Ser	Gly
				20					25					30



Gln Lys Gly Asp Val Val Asp Val Tyr Gln Arg Glu Phe Leu Ala	35	40	45
Leu Arg Asp Arg Leu His Ala Ala Glu Gln Glu Ser Leu Lys Arg	50	55	60
Ser Lys Glu Leu Asn Leu Val Leu Asp Glu Ile Lys Arg Ala Val	65	70	75
Ser Glu Arg Gln Ala Leu Arg Asp Gly Asp Gly Asn Arg Thr Trp	80	85	90
Gly Arg Leu Thr Glu Asp Pro Arg Leu Lys Pro Trp Asn Gly Ser	95	100	105
His Arg His Val Leu His Leu Pro Thr Val Phe His His Leu Pro	110	115	120
His Leu Leu Ala Lys Glu Ser Ser Leu Gln Pro Ala Val Arg Val	125	130	135
Gly Gln Gly Arg Thr Gly Val Ser Val Val Met Gly Ile Pro Ser	140	145	150
Val Arg Arg Glu Val His Ser Tyr Leu Thr Asp Thr Leu His Ser	155	160	165
Leu Ile Ser Glu Leu Ser Pro Gln Glu Lys Glu Asp Ser Val Ile	170	175	180
Val Val Leu Ile Ala Glu Thr Asp Ser Gln Tyr Thr Ser Ala Val	185	190	195
Thr Glu Asn Ile Lys Ala Leu Phe Pro Thr Glu Ile His Ser Gly	200	205	210
Leu Leu Glu Val Ile Ser Pro Ser Pro His Phe Tyr Pro Asp Phe	215	220	225
Ser Arg Leu Arg Glu Ser Phe Gly Asp Pro Lys Glu Arg Val Arg	230	235	240
Trp Arg Thr Lys Gln Asn Leu Asp Tyr Cys Phe Leu Met Met Tyr	245	250	255
Ala Gln Ser Lys Gly Ile Tyr Tyr Val Gln Leu Glu Asp Asp Ile	260	265	270
Val Ala Lys Pro Asn Tyr Leu Ser Thr Met Lys Asn Phe Ala Leu	275	280	285
Gln Gln Pro Ser Glu Asp Trp Met Ile Leu Glu Phe Ser Gln Leu	290	295	300
Gly Phe Ile Gly Lys Met Phe Lys Ser Leu Asp Leu Ser Leu Ile	305	310	315
Val Glu Phe Ile Leu Met Phe Tyr Arg Asp Lys Pro Ile Asp Trp			

111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400  
 401  
 402  
 403  
 404  
 405  
 406  
 407  
 408  
 409  
 410  
 411  
 412  
 413  
 414  
 415  
 416  
 417  
 418  
 419  
 420  
 421  
 422  
 423  
 424  
 425  
 426  
 427  
 428  
 429  
 430  
 431  
 432  
 433  
 434  
 435  
 436  
 437  
 438  
 439  
 440  
 441  
 442  
 443  
 444  
 445  
 446  
 447  
 448  
 449  
 450  
 451  
 452  
 453  
 454  
 455  
 456  
 457  
 458  
 459  
 460  
 461  
 462  
 463  
 464  
 465  
 466  
 467  
 468  
 469  
 470  
 471  
 472  
 473  
 474  
 475  
 476  
 477  
 478  
 479  
 480  
 481  
 482  
 483  
 484  
 485  
 486  
 487  
 488  
 489  
 490  
 491  
 492  
 493  
 494  
 495  
 496  
 497  
 498  
 499  
 500  
 501  
 502  
 503  
 504  
 505  
 506  
 507  
 508  
 509  
 510  
 511  
 512  
 513  
 514  
 515  
 516  
 517  
 518  
 519  
 520  
 521  
 522  
 523  
 524  
 525  
 526  
 527  
 528  
 529  
 530  
 531  
 532  
 533  
 534  
 535  
 536  
 537  
 538  
 539  
 540  
 541  
 542  
 543  
 544  
 545  
 546  
 547  
 548  
 549  
 550  
 551  
 552  
 553  
 554  
 555  
 556  
 557  
 558  
 559  
 560  
 561  
 562  
 563  
 564  
 565  
 566  
 567  
 568  
 569  
 570  
 571  
 572  
 573  
 574  
 575  
 576  
 577  
 578  
 579  
 580  
 581  
 582  
 583  
 584  
 585  
 586  
 587  
 588  
 589  
 590  
 591  
 592  
 593  
 594  
 595  
 596  
 597  
 598  
 599  
 600  
 601  
 602  
 603  
 604  
 605  
 606  
 607  
 608  
 609  
 610  
 611  
 612  
 613  
 614  
 615  
 616  
 617  
 618  
 619  
 620  
 621  
 622  
 623  
 624  
 625  
 626  
 627  
 628  
 629  
 630  
 631  
 632  
 633  
 634  
 635  
 636  
 637  
 638  
 639  
 640  
 641  
 642  
 643  
 644  
 645  
 646  
 647  
 648  
 649  
 650  
 651  
 652  
 653  
 654  
 655  
 656  
 657  
 658  
 659  
 660  
 661  
 662  
 663  
 664  
 665  
 666  
 667  
 668  
 669  
 670  
 671  
 672  
 673  
 674  
 675  
 676  
 677  
 678  
 679  
 680  
 681  
 682  
 683  
 684  
 685  
 686  
 687  
 688  
 689  
 690  
 691  
 692  
 693  
 694  
 695  
 696  
 697  
 698  
 699  
 700  
 701  
 702  
 703  
 704  
 705  
 706  
 707  
 708  
 709  
 710  
 711  
 712  
 713  
 714  
 715  
 716  
 717  
 718  
 719  
 720  
 721  
 722  
 723  
 724  
 725  
 726  
 727  
 728  
 729  
 730  
 731  
 732  
 733  
 734  
 735  
 736  
 737  
 738  
 739  
 740  
 741  
 742  
 743  
 744  
 745  
 746  
 747  
 748  
 749  
 750  
 751  
 752  
 753  
 754  
 755  
 756  
 757  
 758  
 759  
 760  
 761  
 762  
 763  
 764  
 765  
 766  
 767  
 768  
 769  
 770  
 771  
 772  
 773  
 774  
 775  
 776  
 777  
 778  
 779  
 780  
 781  
 782  
 783  
 784  
 785  
 786  
 787  
 788  
 789  
 790  
 791  
 792  
 793  
 794  
 795  
 796  
 797  
 798  
 799  
 800  
 801  
 802  
 803  
 804  
 805  
 806  
 807  
 808  
 809  
 810  
 811  
 812  
 813  
 814  
 815  
 816  
 817  
 818  
 819  
 820  
 821  
 822  
 823  
 824  
 825  
 826  
 827  
 828  
 829  
 830  
 831  
 832  
 833  
 834  
 835  
 836  
 837  
 838  
 839  
 840  
 841  
 842  
 843  
 844  
 845  
 846  
 847  
 848  
 849  
 850  
 851  
 852  
 853  
 854  
 855  
 856  
 857  
 858  
 859  
 860  
 861  
 862  
 863  
 864  
 865  
 866  
 867  
 868  
 869  
 870  
 871  
 872  
 873  
 874  
 875  
 876  
 877  
 878  
 879  
 880  
 881  
 882  
 883  
 884  
 885  
 886  
 887  
 888  
 889  
 890  
 891  
 892  
 893  
 894  
 895  
 896  
 897  
 898  
 899  
 900  
 901  
 902  
 903  
 904  
 905  
 906  
 907  
 908  
 909  
 910  
 911  
 912  
 913  
 914  
 915  
 916  
 917  
 918  
 919  
 920  
 921  
 922  
 923  
 924  
 925  
 926  
 927  
 928  
 929  
 930  
 931  
 932  
 933  
 934  
 935  
 936  
 937  
 938  
 939  
 940  
 941  
 942  
 943  
 944  
 945  
 946  
 947  
 948  
 949  
 950  
 951  
 952  
 953  
 954  
 955  
 956  
 957  
 958  
 959  
 960  
 961  
 962  
 963  
 964  
 965  
 966  
 967  
 968  
 969  
 970  
 971  
 972  
 973  
 974  
 975  
 976  
 977  
 978  
 979  
 980  
 981  
 982  
 983  
 984  
 985  
 986  
 987  
 988  
 989  
 990  
 991  
 992  
 993  
 994  
 995  
 996  
 997  
 998  
 999  
 1000

320	325	330
Leu Leu Asp His Ile Leu Trp Val Lys Val Cys Asn Pro Glu Lys		
335	340	345
Asp Ala Lys His Cys Asp Arg Gln Lys Ala Asn Leu Arg Ile Arg		
350	355	360
Phe Lys Pro Ser Leu Phe Gln His Val Gly Thr His Ser Ser Leu		
365	370	375
Ala Gly Lys Ile Gln Lys Leu Lys Asp Lys Asp Phe Gly Lys Gln		
380	385	390
Ala Leu Arg Lys Glu His Val Asn Pro Pro Ala Glu Val Ser Thr		
395	400	405
Ser Leu Lys Thr Tyr Gln His Phe Thr Leu Glu Lys Ala Tyr Leu		
410	415	420
Arg Glu Asp Phe Phe Trp Ala Phe Thr Pro Ala Ala Gly Asp Phe		
425	430	435
Ile Arg Phe Arg Phe Phe Gln Pro Leu Arg Leu Glu Arg Phe Phe		
440	445	450
Phe Arg Ser Gly Asn Ile Glu His Pro Glu Asp Lys Leu Phe Asn		
455	460	465
Thr Ser Val Glu Val Leu Pro Phe Asp Asn Pro Gln Ser Asp Lys		
470	475	480
Glu Ala Leu Gln Glu Gly Arg Thr Ala Thr Leu Arg Tyr Pro Arg		
485	490	495
Ser Pro Asp Gly Tyr Leu Gln Ile Gly Ser Phe Tyr Lys Gly Val		
500	505	510
Ala Glu Gly Glu Val Asp Pro Ala Phe Gly Pro Leu Glu Ala Leu		
515	520	525
Arg Leu Ser Ile Gln Thr Asp Ser Pro Val Trp Val Ile Leu Ser		
530	535	540
Glu Ile Phe Leu Lys Lys Ala Asp		
545		

<210> 25  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe  
  
 <400> 25  
 tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 26  
 <211> 41  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe  
  
 <400> 26  
 caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 27  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe

<400> 27  
 actcgggatt cctgctgtt 19

<210> 28  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe

<400> 28  
 aggcctttac ccaaggccac aac 23

<210> 29  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Synthetic Oligonucleotide Probe

<400> 29  
 ggcctgtcct gtgtttctca 19

<210> 30  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Synthetic Oligonucleotide Probe

<400> 30  
 tcccaccact tacttccatg aa 22

<210> 31  
 <211> 25  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 31

ctgtggtacc caattgccgc cttgt 25

<210> 32

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 32

attgtcctga gattcgagca aga 23

<210> 33

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 33

gtccagcaag ccttcatt 18

<210> 34

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 34

cttctgggcc acagccctgc 20

<210> 35

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 35

cagttcaggt cgtttcattc a 21

<210> 36

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 36

ccagtcaggc cgtttttaga 19

<210> 37

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 37

cgggcgcccc agtaaaagct c 21

<210> 38

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 38

cataaagtag tatatgcatt ccagtgtt 28